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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,800	12/17/2001	Katsumi Tada	ASA-1046	7410

7590 11/12/2003

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SUITE 370
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EXAMINER

NGUYEN, CINDY

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 11/12/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/015,800

Applicant(s)

TADA ET AL.

Examiner

Cindy Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

This is in response to application filed on 12/17/01 in which claims 1-20 are presented for examination.

1. Information Disclosure Statement

The information disclosure statement filed on 12/17/01 is in compliance with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. Because it has been placed in the application file, and the information referred to therein has been considered as to the merits.

2. Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it contains a single sentence.

Correction is required.

3. Claim Objections

Claims 7-10 and 12-15 are objected to because of the following informalities:

Regarding claims 7-10 and 12, it is unclear whether "a search character string expanding method according to claim 6" is correct, or whether it should have been "a search character string expanding in the system according to claim 6" instead.

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Regarding claims 13-15, it is unclear whether "a search character string expanding method according to claim 11" is correct, or whether it should have been "a search character string expanding in the system according to claim 6" instead.

Appropriate correction is required.

4. *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. *Claims 1-11, 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Itonori et al. (U.S 5943443) (Itonori).*

Regarding claim 1 and 16, Itonori disclose: An apparatus and a system for expanding a character string, wherein the character string is entered to search image information of documents, the apparatus comprising:

a character string dividing device (101, fig. 21 and corresponding text, Itonori) to divide the entered character string into a plurality of partial character strings each having a plurality of characters (col. 19, lines 1-20, Itonori);

a referencing device (109, fig. 21 and corresponding text, Itonori) to reference a similarity table (111, fig. 21 and corresponding text, Itonori), the similarity table previously storing groups of similar partial character strings (col. 19, lines 49-64, Itonori), each of the

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groups of similar partial character strings being derived from each of the plurality of partial character strings obtained from the character string dividing device by changing at least one of the characters of each partial character string to a different character which is similar in shape (col. 19, lines 21-48, Itonori); and

an expansion device (col. 19, lines 58-64, Itonori) to combine the plurality of similar partial character strings given by the referencing device into expanded words and store them in an expanded word table (col. 20, lines 26-43, Itonori).

Regarding claim 2 and 17, all the limitations of these claims have been noted in the rejection of claim 1 and 16 above, respectively. In addition, Itonori disclose: wherein the similarity table is arranged in the order of their emergence probability in each group (col. 13, lines 65 to col. 14, lines 17, Itonori) and has only those similar partial character strings whose emergence probabilities are greater than a predetermined value (col. 14, lines 55 to col. 15, line 9, Itonori).

Regarding claim 3 and 18, all the limitations of these claims have been noted in the rejection of claim 1 and 16 above, respectively. In addition, Itonori disclose: wherein, when the similarity table does not include similar different characters, the referencing device gives the partial character strings obtained from the character string diving device to the expansion device, and the expansion device uses the partial character strings to produce the expanded words (col. 9, lines 51 to col. 10, lines 3, Itonori).

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Regarding claim 4 and 19, all the limitations of these claims have been noted in the rejection of claim 1 and 16 above, respectively. In addition, Itonori disclose: wherein, when the similarity table does not have entries for the partial character strings obtained from the character string diving device, the referencing device references a second similarity table which stores in advance second groups of similar partial character strings arranged in the order of magnitude of their emergence probability in each group (col. 14, lines 1-17, Itonori), each of the second groups of similar partial character strings being derived from each of short partial character strings made up of a smaller number of characters than the partial character strings obtained from the character string diving device by changing at least one of the characters of each short partial character string to a different character which is similar in shape (col. 11, lines 51-65, Itonori).

Regarding claim 5 and 20, all the limitations of these claims have been noted in the rejection of claim 1 and 16 above, respectively. In addition, Itonori disclose: wherein, when the entered character string is not divisible into the plurality of partial character strings without a remainder, characters adjoining each character of the remainder character string are added to the each character so that resultant character strings have the same number of characters as the divided character strings (col. 16, lines 43-61, Itonori), and the character strings thus obtained are added to the plurality of partial character strings (col. 16, lines 62 to col. 17, lines 4, Itonori).

Regarding claim 6, Itonori disclose: a system for retrieving a document containing a search character string specified by an operator in a search text documents (col. 11, lines 40-50, Itonori) that are produced by performing character recognition processing on image documents

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(col. 11 , lines 51 to col. 12, lines 40, Itonori), a search character string expanding method comprising:

a search character string dividing step of dividing the entered search character string into partial character strings each consisting of a predetermined number n of characters ($n \geq 2$) (col. 10, lines 57-col. 11, lines 5, Itonori);

a similarity table referencing step of checking the n -character partial character strings ($n \geq 2$) against an n -character-based similarity table, the n -character-based similarity table being generated in advance by storing character strings of similar character shapes that are highly likely to be erroneously recognized (col. 11, lines 6-50, Itonori); and

a search character string expanding step of extracting groups of similar character strings by checking the partial character strings making up the search character string against the n -character-based similarity table and combining the extracted similar character strings to generate expanded words (col. 9, lines 31-64, Itonori).

Regarding claim 7, all the limitations of this claim have been noted in the rejection of claim 6 above. In addition, Itonori disclose: wherein entry characters in the n -character-based similarity table include only a part of partial character strings each of which is a combination of n characters (col. 10, lines 57 to col. 11, lines 5, Itonori).

Regarding claim 8, all the limitations of this claim have been noted in the rejection of claim 7 above. In addition, Itonori disclose: wherein when a partial character string making up the search character string is not found in the n -character-based similarity table, similar character strings to the partial character string are not extracted (col. 16, lines 43-61, Itonori).

Regarding claim 9, all the limitations of this claim have been noted in the rejection of claim 7 above. In addition, Itonori disclose: wherein when a partial character string making up the search character string is not found in the n-character-based similarity table (col. 22, lines 22-51, Itonori), an m character-based similarity table, which is prepared in advance by storing similar m-character strings ($m < n$) of similar character shapes highly likely to be erroneously recognized, is referenced to generate expanded words (col. 23, lines 30-65, Itonori).

Regarding claim 10, all the limitations of this claim have been noted in the rejection of claim 6 above. In addition, Itonori disclose: further including a expansion method switching step of calculating a length of the search character string and selecting between expanded word generation methods according to the search character string length (col. 32, lines 21-43, Itonori).

Regarding claim 11, Itonori disclose: In a system for retrieving a document containing a search character string specified by an operator in a search through text documents that are produced by performing character recognition processing on image documents (col. 2, lines 51 to col. 3, lines 19, Itonori), a search character string expanding method comprising:

a expansion method switching step of calculating a length of the search character string and selecting between expanded word generation methods according to the search character string length (col. 32, lines 21-43, Itonori).

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Regarding claim 13, all the limitations of this claim have been noted in the rejection of claim 11 above. In addition, Itonori disclose: wherein whether the expanded words are generated or not is determined according to the search character string length (col. 22, lines 52-61, Itonori).

Regarding claim 14, all the limitations of this claim have been noted in the rejection of claim 13 above. In addition, Itonori disclose: wherein setting information is provided for selecting between the expanded word generation methods (col. 32, lines 21-43, Itonori).

Regarding claim 15, all the limitations of this claim have been noted in the rejection of claim 14 above. In addition, Itonori disclose: a text search step of executing a search by using as a search condition a logical sum of expanded search character strings obtained by the search character string expansion (col. 11, lines 40-50, Itonori).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Itonori et al. (U.S. 5943443) (Itonori) in view of Kubota (U.S. 6041323).

Regarding claim 12, all the limitations of this claim have been noted in the rejection of claim 10 above. However, Itonori didn't disclose: wherein the number of expanded character strings generated is adjusted according to the search character string length. On the other hand, Kubota discloses: wherein the number of expanded character strings generated is adjusted according to the search character string length (col. 15, lines 13-50, Kubota). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the step for expanding character strings generated is adjusted according to the search character string length in the system of Itonori as taught by Kubota. The motivation being to enable to fit the length value during searching character string for the expansion decision according to the kind of characters in languages.

7. Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S.-5581752, Electronic document retrieval and display system and method of retrieving electronically stored documents.

U.S.-5987460, Document retrieval assisting method and system for the same and document retrieval service using the same with document frequency and term frequency.

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US-6173253, Sentence processing apparatus and method thereof utilizing dictionaries to interpolate elliptic characters or symbols.

US-5991755, Documents retrieval system for retrieving a necessary document.

US-5680612, Document retrieval apparatus retrieving document data using calculated record identifier.

U.S-6473754, Method and system for extracting characteristic, method and system for searching for relevant document using the same, storage medium for storing characteristic string extraction program, and storage medium for storing relevant document searching program.

U.S-5469354, Document data processing method and apparatus for document retrieval.

8. Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 703-305-4698. The examiner can normally be reached on M-F: 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

CN

Cindy Nguyen
November 4, 2003


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